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MEMORANDUM FOR: Deputy Director of Central Intelligence

THROUGH : Executive Director-Comptroller
Director, Office of Planning, Programming & Budgeting
Assistant Deputy Director for Intelligence

SUBJECT : Request for Approval to Contract for the Design and Fabrication of a Dual Format Data Block Reader with Fairchild Space & Defense Systems Division at a Cost of from FY-1972 R&D Funds 25X1

1. This memorandum requests approval for the commitment of R&D funds for an NPIC contract. The specific request is stated in paragraph nine.

2. The National Photographic Interpretation Center, through NSCID #8 and the National Tasking Plan, is charged with providing the most effective, timely, and economic exploitation of photography and remote sensory products. The Center is also charged with providing certain additional support to the intelligence community, such as updating and maintaining the National Data Base and maintaining a back-up ephemeris capability. The manual, 25X1
October 1970, 25X1
Page 9 states: "NPIC will maintain a back-up capability to the Mission Performance Report (MPR). In the event the MPR cannot be made available, NPIC will develop ephemeris and frame data based on telemetry tapes provided from the and actual film 25X1
formats. This information will then be made available to all MPR recipients."

3. While NPIC has been aware of this general "back-up data" requirement for quite some time, a new responsibility has recently been introduced. Latest reports indicate that the MPR, which precedes each mission, will not contain the time data readout required for data reduction of the Mapping Camera System in the 25X1

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25X1

TOP SECRET

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this information is contained only in the binary data block recorded on the film. Therefore, it will be necessary for NPIC to read the time data from each frame of Stellar/Terrain photography after receipt of the film in the Center. This information will enable NPIC to:

a. Accurately update the National Data Base.
b. Provide Center components with precise data for positioning targets.
c. Provide the mapping community with data of the accuracy required in charting and mapping.

In this regard, the main camera system time readout (which is included in the PR) will not suffice for the Mapping Camera System since the two systems are separately operated, and it is possible that the conjugate imagery can have as much as 100%, or as little as 0%, common coverage between the terrain camera and the main panoramic cameras.

4. Investigation into the process of manually providing this readout has shown that, for the 4000 frames of information involved, it may be possible (through interpolation) to provide this data within one working week. However, the inherent accuracy provided by the attitudinal system (time readout to 0.1 millisecond) cannot be maintained through an interpolation of the data. Additionally, approval has now been granted to replace the 3400 type film with ultra-thin base film in the fourth stellar/terrain package; this will increase the frame count from approximately 4000 frames to approximately 7000 frames--virtually an impossible task for manual readout. It is anticipated that Center operations will require, and make the utmost use of, this refined accuracy inherent in the Stellar/Terrain system, as it will furnish target positional information an order of magnitude more accurate than current systems. Additionally, the Mapping, Charting and Geodetic (MCG) groups in the intelligence community will use the data for position refinement in their exploitation.

5. The proposed Dual Format Data Block Reader (DFR) will provide the capability of rapidly and accurately reading time data from both the stellar and terrain camera formats

TOP SECRET

25X1

SUBJECT: Request for Approval to Contract for the Design and Fabrication of a Dual Format Data Block Reader with Fairchild Space & Defense Systems Division at a Cost from FY-1972 R&D Funds 25X1

25X1

This electromechanical device will read the data from either of two predetermined formats--on negative, or positive film--while the film is transported at a rate of 12 inches per second. The DFR will locate, read, organize, and place the data on magnetic tape--with appropriate recognition patterns--for subsequent processing by the NPIC central computer. The data from the stellar data block will be combined with that from the terrain data block in the NPIC computer and, in turn, integrated with the existing MPR of the mission. An operator will be able to select a mode of operation, initiate signals, monitor, and exercise controls through the front panel assembly of the DFR.

6. The effort is felt to be fairly straightforward with a minimum of technical risk involved due to the fact that the selected contractor has, in the past, built similar readers for the Center. The first reader was built to accommodate the KH-4A data block, while the second handles both the KH-4B

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Investigation into a modification of the second reader to handle 25X1 material revealed that it would be more expensive to modify the existing equipment than to build a new reader specifically

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7. The contractor has offered NPIC two optional approaches. Under the first option, the contractor will build the reader and supply both the magnetic tape drive and the printer. Under the second option, the contractor would supply only the reader; the magnetic tape drive and its electronics, and the printer and associated electronics would be supplied as GFE. The second option is the most desirable. First, it saves and second, the equipment can readily be supplied 25X1 as GFE using components from the previously completed systems. Only one of these systems is currently being utilized by NPIC. There is no anticipated follow-on to this procurement, since one instrument will handle the anticipated workload.

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TOP SECRET

25X1

25X1

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25X1

9. It is requested that approval be granted to negotiate a contract with Fairchild Space and Defense Systems for the design and fabrication of a Dual Format Data Block Reader at a cost not to exceed [redacted] from FY-1972 R&D funds.

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ARTHUR C. LUNDAHL
Director
National Photographic Interpretation Center

Attachments:
1. Proposal
2. Form 2420

CONCUR:

Assistant Deputy Director for Intelligence — Date

APPROVED:

Deputy Director of Central Intelligence — Date

Distribution:
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NPIC/TSG/RED/SDB [redacted] (22 July 1971)

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